AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

What is claimed is:

1. (Currently amended) A method for detecting a microorganism in a specimen ~~comprising~~ , said method consists of the steps of:

(a) extracting genomic DNA from the specimen;

(b) performing the first polymer chain reaction (PCR) with an outer pair of primers using the genomic DNA as a template to obtain the first PCR DNA product;

(c) performing the second PCR with an inner pair of primers using the first PCR DNA product as a template to obtain the second PCR DNA product;

(d) hybridizing the second PCR DNA product with a probe attached to magnetic beads to obtain hybridized DNA fragments in a reaction container, in which the probe ~~comprises~~ consists of a nucleotide sequence specific for, and is capable of, hybridizing with the second PCR DNA product; [[and]]

(e) removing unbound material and non-specific PCR products while subjecting the reaction container to a magnetic force; and

(f) detecting hybridized DNA fragments to determine whether microorganism DNA is present in the specimen,

wherein each pair of primers include respective forward and reverse primers, and each primer ~~comprises~~ consists of a respective nucleotide sequence that is complementary to the genomic DNA of the microorganism, and the inner pair of primers bind to the first PCR DNA product.

2. (Previously presented) The method of Claim 1, wherein the microorganism is *Mycobacterium tuberculosis*.

3. (Currently amended) The method of Claim 2, wherein the outer pair of primers ~~comprise~~ consist of the nucleotide sequences set forth by TGAGGGCACGAGGTGGCA (SEQ ID NO: 8) and CGTAGGCGTCGGTCACAA (SEQ ID NO: 9), and the inner pair of primers ~~comprise~~ consist of the nucleotide sequences set forth by GATGCACCGTCGAACGGC (SEQ ID NO: 10) and CCACGTAGGCGAACCCT (SEQ ID NO: 11), respectively.

4. (Previously presented) The method of Claim 1, wherein at least one of the inner pair of primers is labeled with a labeling agent.

5. (Previously presented) The method of Claim 4, wherein the labeling agent is biotin.

6. (Previously presented) The method of Claim 4, wherein the labeling agent is selected from the group consisting of biotin, florescent molecules, radioactive molecules, chemiluminescent molecules, and chromogenic molecules.

7. (Previously presented) The method of Claim 2, wherein the probe comprises the nucleotide sequence set forth by amine-TAACCGGCTGTGGGTAGCAG (SEQ ID NO: 7).

8-10 (Canceled)

11. (Currently amended) A diagnostic kit for detecting a microorganism in a specimen ~~comprising~~ , said kit consists of:

(a) a microorganism-specific probe attached to magnetic beads;

(b) an outer pair and inner pair of primers for performing the first and the second PCR, respectively, wherein at least one of the inner pair of primers is labeled by a DNA labeling agent;

(c) an avidin or streptavidin-enzyme complex; and

(d) an enzyme substrate for the avidin or streptavidin-enzyme complex, wherein each pair of primers include respective forward and reverse primers, and each primer ~~comprises~~ consists of a respective nucleotide sequence that is complementary to genomic DNA of the microorganism, and wherein the probe ~~comprises~~ consists of a nucleotide sequence that is complementary to a DNA fragment from the second PCR using the inner pair of primers.

12. (Previously presented) The kit of Claim 11, wherein the avidin or streptavidin-enzyme complex is avidin or streptavidin horseradish peroxidase complex.

13. (Previously presented) The kit of Claim 11, wherein the DNA labeling reagent is a compound having a formula:

Fu-BE-D

wherein FU represents a Furocoumarin compound selected from the group consisting of angelicin compound and psoralen compound;

wherein BE represents none or a binding enhancer selected from the group consisting of C4-12 alkyl, alkyenyl, polyalkylamine and polyethylene glycol; and

wherein D represents a detectable group selected from the group consisting of biotin, fluorescent molecule, acridinium ester and acridinium-9-carboxamide.

14. (Currently amended) The kit of Claim 11, wherein the DNA labeling reagent is biotin, or aminomethyl-4', 5'-dimethylangelicin[[)]] acridinium carboxamide.

15-20 (Canceled)

21. (Previously presented) The kit of Claim 11, wherein the outer pair of primers comprise the nucleotide sequences set forth by TGAGGGCACGAGGTGGCA (SEQ ID NO: 8) and CGTAGGCGTCGGTCACAA (SEQ ID NO: 9), and the inner pair of primers comprise the nucleotide sequences set forth by GATGCACCGTCGAACGGC (SEQ ID NO: 10) and CCACGTAGGCGAACCCT (SEQ ID NO: 11), respectively.

22. (Previously presented) The kit of Claim 21, wherein the probe comprises the nucleotide sequence set forth by amine-TAACCGGCTGTGGGTAGCAG (SEQ ID NO: 7).

23. (Previously presented) The method of Claim 5, wherein the detecting step further comprises the steps of:

(a) reacting the hybridized DNA fragments with an avidin or streptavidin-enzyme complex and an enzyme substrate for the avidin or streptavidin-enzyme complex; and

(b) reading luminescence.

24. (Previously presented) The method of Claim 23 further comprising the step of quantifying the genomic DNA of the microorganism in the specimen by determining relative light units (RLU).

25. (Previously presented) The method of Claim 1, wherein the specimen is selected from the group consisting of sputum, serum, cerebral spinal fluid (CSF), and pleural effusion.

26. (Previously presented) The method of Claim 1, wherein the hybridizing and removing steps are performed in an apparatus having a means for providing the magnetic force only to the removing steps.

27. (Previously presented) The method of Claim 1, wherein each of the primers contains nucleotides that are free of ribose.